

CLAIMS

1. A plank section for use in making a rocket motor case having an end closure and being overwrapped with sheet material, said plank section comprising:

5 a) a plank body having a plank leg extending from a first end thereof, said plank body having a defined width and a transverse arcuate cross section so that a plurality of plank section joined together form a circumference corresponding to said rocket motor case, said plank leg having a width less than said defined width so that adjacent plank legs form a venting space therebetween for release of pressure from within said rocket motor case, said plank body being configured to a attach to an end closure of said rocket motor case.

2. The plank section of claim 1, wherein said plank body has at least one tongue on one side and a corresponding groove on the other side, a tongue of one plank body engaging a groove of an adjacent plank body when said plank sections are joined together.

3. The plank section of claim 1, wherein said plank leg includes a longitudinal stiffening rib.

4. The plank section of claim 1, wherein said plank body has a slot therein to receive a fin of said rocket motor case.

5. The plank section of claim 1, wherein said plank section has a top, the top surface having a first step therein, said first step forming a stop for overwrapped sheet material of said rocket motor case, and a bottom surface of said plank body having a stepped portion for engaging said end closure of said rocket motor case.

6. The plank section of claim 1, wherein said plank section is made from a metallic or composite material.

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7. In a rocket motor case having an end closure of defined diameter and overwrapped sheet material forming a case sidewall, the improvement comprising a plurality of plank sections attached to said end closure, each said plank section further comprising a plank body having a plank leg extend therefrom, said plank body having a defined width and transverse arcuate cross sections to correspond to said end closure defined diameter, each plank leg having a width less than said defined width to form a venting space between adjacent plank legs, said plank legs receiving said overwrapped sheet material and forming part of said case sidewall.

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8. The rocket motor case of claim 7, wherein said plank body has at least one tongue on one side and a corresponding groove on the other side, a tongue of one plank body engaging a groove of an adjacent plank body when said plank sections are joined together.

9. The rocket motor case of claim 7, wherein said plank leg includes a longitudinal stiffening rib.

10. The plank section of claim 7, wherein said plank has a slot therein to receive a fin of said rocket motor case.

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11. The plank section of claim 7, wherein said plank section has a top, the top surface having a first step therein, said first step forming a stop for said overwrapped sheet material of said rocket motor case, and a bottom surface of said plank body having a stepped portion for engaging said end closure of said rocket motor case.

12. The plank section of claim 7, wherein said plank section is made from a metallic or composite material.

13. The rocket motor casing of claim 7, wherein said plank sections are bonded to an insulation bladder which surrounds propellant grain in said rocket motor case.

14. The rocket motor casing of claim 7, wherein said plank sections are bonded to a propellant grain in said rocket motor case.

5 15. The rocket motor case of claim 13, wherein said insulation bladder is tubular and further comprising a pair of sealing rings arranged at ends of said tubular insulation bladder with said plank sections are attached thereto, said venting spaces being between said sealing rings.

10 16. In a method of making a rocket motor case having an end closure and forming a sidewall by overwrapping of sheet material, the improvement comprising:

15 a) attaching a plurality of plank sections to an end portion of said end closure, each plank section having a plank leg having a width less than an overall width of said plank section such that adjacent plank legs form a venting space, and

20 b) overwrapping said sheet material on said plank legs to form said sidewall of said rocket motor case;

c) said end closure, plank sections and overwrapped sheet material forming said rocket motor case.

17. The method of claim 16, wherein said plank sections are adhesively bonded to said end closure.

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18. The method of claim 16, wherein each said plank section has a tongue and groove on respective sides thereof, adjacent plank sections attached together by engagement between respective said tongues and grooves.

19. The method of claim 16, wherein said plank sections are attached to seal rings in a tubular insulating bladder.

20. The method of claim 16, wherein adjacent plank sections are attached together.

21. The method of claim 16, wherein said plank legs are attached to an insulation bladder sized to encompass a heat sensitive energetic material for said rocket motor case.

22. The method of claim 1, further comprising the step of providing at least one initiation charge in a said venting space.

23. The rocket motor case of claim 7 further comprising at least one initiation charge arranged in a said venting space.

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